Before the
Federal Communications Commission
Washington, D.C. 20554

In the Matter of	)	
	)	
Revision of Part 15 of the Commission's	)	
Rules Regarding Ultra-Wideband	)	ET Docket No. 98-153
Transmission Systems	)	

Reply Comments of M/A-COM

M/A-COM, a division of Tyco Electronics Corporation which is a unit of Tyco International,. submits these reply comments in response to the Notice of Proposed Rulemaking ("Notice"), FCC 00-163, released May 11, 2000 in the above-captioned proceeding.

Summary of Position

A review of the comments of Motorola, Delphi and others suggest that they have largely misunderstood the major purpose of this proceeding. The major purpose is to change the rules to allow intentional emissions to fall within restricted bands, because only with this change will it be possible for the public to gain the benefits of UWB technology. Without this change, UWB devices would be prohibited. But it is not the purpose to give further protection to licensed services in non-restricted bands, as proposed by Motorola, Sprint, Nortel, Cisco, Mobile Communications Holdings ("MCHI") and others, nor is it the purpose to promote unnecessary narrowband emissions in restricted bands as Delphi proposes.

M/A-COM reiterates its position, which was widely supported, that the Commission should modify the peak-to-average ratio limits so as to allow manufacturers to trade off duty cycle against peak signal levels.

Definition of Ultra-wideband Device

Delphi misunderstands the purpose of this proceeding. Delphi thinks the purpose is to promote emissions in restricted bands even if those emissions could avoid restricted bands. Delphi's Figure 1 illustrates this. By defining UWB to cover narrower bandwidths, as Delphi requests, narrowband devices would be allowed to radiate intentional emissions in restricted bands. But those devices, because of their narrower bandwidths, can avoid restricted bands. Delphi's Figure 1 shows this clearly—moving the narrowband curve up by only 20 units will totally avoid the adjacent restricted band and allow operation under the existing Part 15 rules.[1]

Thus, we oppose Delphi's request to change the proposed definition of UWB to encompass narrowband devices that could easily be designed or redesigned to avoid restricted bands.

Emission Limits

Motorola, Sprint, Nortel, Cisco, MCHI and others misunderstand the purpose of this proceeding. They evidently think the purpose is to protect mobile radio and fixed microwave bands from interference caused by Part 15 devices generally, rather than UWB devices specifically. The mobile radio and fixed microwave bands that they seek to protect are not restricted bands, and thus are already available for use by Part 15 devices. For example, there are no restricted bands between 614 to 960 MHz, nor between 1722.2 to 2200 MHz nor between 2500 to 2655 MHz. It is already permissible under Part 15 to put unlicensed intentional emissions in those bands, using narrowband emitters. It would

[1] Delphi's argument that it will suffer competitive disadvantage if the proposed rules are adopted must be disregarded. The Commission's responsibility is to promote the deployment of new technology in the public interest, not to protect the economic position of individual companies. And Delphi is simply wrong in its claim that intentional emissions in the 23.6-24.0 GHz band are permitted in Europe. By international treaty, the ITU regulations that prohibit intentional emissions in this band apply in Europe as well as in this country. See International Radio Regulations, Article S5, footnote S5.340.

be unfair, and serve no useful purpose, to impose 12 dB tighter limits on intentional emissions in unrestricted bands if they come from UWB devices, but not tighten the limits for other Part 15 devices.[2] On the other hand, if these parties seek to tighten the emission limits in Section 15.209 for all Part 15 devices that operate in the bands they seek to protect, they should file a separate petition for rulemaking, because that is outside the scope of this proceeding.

Peak-to-Average Ratios

There is widespread support for modifying the peak-to-average ratio limits so as to allow manufacturers to trade off duty cycle against peak signal levels. This view is supported by Valeo, Anro Engineering, XtremeSpectrum and others. M/A-COM believes that the peak-to-average ratio of UWB transmitters plays little or no role in determining whether interference will result, at least for the receivers that are typically in use in the frequency bands around 24 GHz where M/A-COM's UWB device operates. Consequently, we reiterate our support for the formula in paragraph 43 that specifies a peak-to-average ratio that increases with increasing bandwidth. We believe there is no need for the alternative proposal of a 20 dB limit within any 50 MHz bandwidth.

[2] Whatever the validity of Motorola's interference calculations at 2 GHz, they have no validity whatsoever at 24 GHz, because Motorola has ignored the 20 log f frequency dependence. At 24 GHz, an additional loss of 20 log (24/2) = 21.5 dB would be encountered.

Conclusion

M/A-COM fully supports both the purpose and the intent of the Proposed Rulemaking. We recommend that the Commission modify the peak-to-average ratio limits so as to allow manufacturers to trade off duty cycle against peak signal levels. As applied to vehicular applications, we believe that this and other aspects of the Rulemaking proposal will permit the deployment of a number of safety applications and driver convenience features in the near future without impact on the current users of the frequency spectrum. These automotive UWB applications have the capability to provide more stress free and safer driving in a new era of Intelligent Transport Systems.

Respectfully submitted,

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